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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,420	06/23/2003	David Matthew Neau		6929

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EXAMINER

AWAI, ALEXANDRA F

ART UNIT PAPER NUMBER

3663

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,420	NEAU, DAVID MATTHEW	
	Examiner	Art Unit	
	Alexandra Awai	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 12 & 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 have been examined.

Specification

2. The disclosure is objected to because of the following informalities: Several times within the Detailed Description, the applicant refers to an Appendix (e.g. page 18, lines 18 and 20). No Appendix containing the information referenced by the applicant in the Detailed Description was included in the application submission.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9 and 11 recite the limitation, "camera". There is insufficient antecedent basis for this limitation in the claim. The camera in question is never actively claimed in independent claim 1. Thus, the meets and bounds of the claim cannot be ascertained.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Collins (U.S. 6,169,776 B1).

Collins discloses an automated inspection apparatus comprising:

- a drive system comprising a plurality of drive assemblies, a plurality of support frame members coupled to said drive assemblies, and a plurality of guide roller assemblies coupled to said support frame members, said drive system configured to movably engage the shroud top;
- a mast subassembly coupled to said drive system; and
- a scanner subassembly movably coupled to said mast subassembly, said scanner subassembly configured to inspect the shroud welds (column 7, lines 47-59).
- An inspection apparatus in accordance with the recitation of the first claim wherein each of the said drive assemblies comprises (column 7, lines 61-62):
 - a wheel assembly comprising a drive wheel pair, said wheel assembly pivotly coupled to said support plates, said drive wheel pair configured to engage the shroud top (column 8, lines 1-4).
- An inspection apparatus in accordance with the recitation of the second claim wherein each said drive wheel pair comprises:

- a first and a second drive wheel, said first drive wheel coupled to a drive motor and said second drive wheel coupled to said first drive wheel with a timing belt (column 8, lines 10-14).
- An inspection apparatus in accordance with the recitation of the first claim wherein said scanner subassembly comprises:
 - a scanner and a horizontal frame, said horizontal frame movably coupled to said mast subassembly (column 8, lines 23-27).
- An inspection apparatus in accordance with the recitation of the sixth claim wherein said scanner subassembly further comprises:
 - a turntable rotatably coupling said scanner to said horizontal frame (column 8, lines 28-31).
- An inspection apparatus in accordance with the recitation of the seventh claim wherein said scanner subassembly further comprises:
 - a movable plate movably coupling said scanner to said turntable, said movable plate being linearly movable (column 8, lines 32-35).

Regarding Claim 1, although Collins teaches the use of a drive system having a plurality of drive assemblies with a plurality of support frame members, and the invention described in the current application discloses a “trolley including at least two roller assemblies coupled by a connecting member.” Said trolley and said connecting member can be construed to represent complex structures that are structurally equivalent to a plurality of drive assemblies.

Additionally, the directionality of the mast, which is coupled to the drive system, is a design choice dependent upon the composition of the mast. Regarding Claims 7 and 8 as well as Claim

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1, the scanner subassembly of the Collins apparatus comprises a horizontal frame (column 8, line 25), a turntable (column 8, line 29) and a plate (column 8, line 34) that are movably coupled to each other and the mast subassembly. These members are, for the intent and purpose of the invention described in the current application, functionally equivalent to the carriage and rotatably coupled first and second arms.

Regarding Claim 2, although Collins teaches that the drive assemblies are partially comprised of drive wheel pairs that may engage the shroud top, Collins is silent as to the angle at which said drive wheel pairs are secured to the rest of the drive assembly. Given that “roller” and “wheel” are understood within the art to be analogous articles, the structure described as a “wheel assembly pivotly coupled to said support plates,” is equivalent to the device of Claim 2 wherein, “the roller assemblies are coupled to the connecting member at an angle relative to the connecting member,” as it is the curvature of the shroud flange or like surface that dictates the angular configuration of this portion of the device.

Statements of intended use or field of use, “adapted to” or adapted for” clauses, are essentially method limitations or statements of intended or desired use. Thus these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ 641; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 512 USPQ 235; *In re Otto* 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

See MPEP § 2115, which states:

A claim containing a “recitation with respect to the matter in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ 2nd 1647.
Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. *In re Danly*, 120 USPQ 528, 531.

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Apparatus claims cover what a device is not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb inc.*, 15 USPQ 2nd 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins as applied to Claim 1, and further in view of Anderson *et al* (U.S. 4,585,610).

Regarding Claims 3 and 5, Collins discloses drive assemblies comprising roller assemblies configured to contact and roll along the outside of the shroud, and additional roller assemblies configured to contact and roll along the inside of the shroud. Collins fails to teach the use of a guide wheel or roller that rests upon the steam dam (a component which is structurally equivalent to the upper cylindrical perimeter of the shroud). Anderson *et al* disclose an alternate drive assembly wherein wheels of the inspection apparatus run on the upper planar, cylindrical surface of the shroud flange (column 2, lines 39-40). Furthermore, the device described in applicant Claim 4 is equivalent to a component of the inspection apparatus disclosed in the fourth claim of Collins (column 8, lines 10-14).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a drive assembly comprising rollers that contact both the outside of the shroud

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flange and the upper cylindrical surface, or steam dam perimeter. The motivation would have been to benefit from the greater stability of utilizing a plurality of surface contacts, while maintaining the freestanding nature of the inspection apparatus.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins as applied to Claim 1, and further in view of Altman (U.S. 4,647,422).

Altman discloses vertically supported, rotatable elevating screws as a means of vertically displacing the frame of a nuclear reactor inspection apparatus (column 5, lines 15-17). One of ordinary skill in the art at the time of the applicant's invention would have recognized that it might be advantageous to use an elevating mechanism having a threaded screw rather than a gear rack. The motivation would have been to have a robust mechanism that is easier to manufacture.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins as applied to Claim 1, and further in view of Zwart, Jr. (U.S. 4,686,078).

Collins does not teach the use of a float chamber, or buoyant ballast as a method of vertically translating the scanner. Rather, the Collins apparatus uses a motor coupled to a gear rack for this purpose. However, the ballast, whether it functions as a buoy or a weight, is an old and well-known type of stabilizer or vertical translator in the mechanical arts. Zwart, Jr. teaches that buoyant chambers can be used to vertically maneuver an inspection device (column 1, lines 41-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a buoyant chamber while performing underwater excursions with an inspection device. The motivation to attach such a counterbalance or buoy would have been to maintain a particular vertical elevation of the arm supporting the camera, stabilizing it, and thereby improving the quality of the visual inspection.

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11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins as applied to Claim 1.

The sections of Collins's disclosure relevant to the rejection of the limitations within Claim 13 have been recited in the paragraph numbered, 6, of this action, with the exception that Collins does not disclose a handle, per se. However, the method of using the Collins apparatus requires that it be lifted and removed from the reactor pressure vessel (column 3, lines 34-35), necessitating that it be grasped, either by a person or remote-controlled appendage.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to place a handle on the mast. The motivation to use a handle would have been to facilitate grasping of the device in order to remove or replace it.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins and Zwart, Jr. ~~as applied to Claim 13~~ and further in view of Altman and Kurosawa *et al* (5,305,361).

Although the Collins apparatus comprises a scanner, and is silent as to the use of a camera for inspection, it is inherent to the Collins apparatus that it may be adapted to support a camera. The motivation to modify the Collins apparatus as such would be to accomplish visual inspections with a more economical or easily obtained materials. Zwart, Jr. teaches the use of a buoyant chamber as discussed in section 10 of this Office action.

Altman discloses vertically supported, rotatable elevating screws as a means of vertically displacing the frame of a nuclear reactor inspection apparatus (column 5, lines 15-17). One of ordinary skill in the art at the time of the applicant's invention would have recognized that it might be advantageous to use an elevating mechanism having a threaded screw rather than a gear rack. The motivation would have been to have a robust mechanism that is easier to manufacture.

Kurosawa *et al* disclose a method of nuclear reactor pressure vessel maintenance, and the apparatus therefor, which utilizes tools. It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt an inspection device to carry a tool or tools in order to effect immediate repairs to the damage revealed by the visual inspection, thereby saving time and effort.

13. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins in view of Zwart, Jr., Altman and Kurosawa, as applied to Claim 14 above, and further in view of Anderson *et al*.

The limitations that Claims 15-17 impose upon the device as recited in Claim 14 do not provide for a novel device for the reasons set forth in section 8 of this Office action due to the prior art disclosed in Anderson *et al*.

14. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins in view of Zwart, Jr., Altman and Kurosawa, as applied to Claim 14.

Kurosawa *et al* disclose a method of nuclear reactor pressure vessel maintenance, and the apparatus therefor, utilizing components that perform the roles of a water lance (column 15, lines 31-32) and a vacuum hose (column 16, lines 46-48) as disclosed in the applicant's specification.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt an inspection device to carry a tool or tools, particularly tools such as the water lance or vacuum hose, which are typically used to repair the damage that a shroud or pressure vessel inspecting apparatus might reveal.

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Allowable Subject Matter

15. Claims 12 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

16. The cited examples of prior art made of record and not relied upon are considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Awai whose telephone number is (517) 272-3079. The examiner can normally be reached on 8:30-5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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AFA

July 18, 2005


JACK KEITH
PRIMARY EXAMINER
SPF 3663